MANUAL

FOR INSTALLATION, OPERATION AND MAINTENANCE OF WOOD PELLET BURNER FROM SERIES BISOLID GP

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1. IMPORTANT INFORMATION ABOUT THE PELLET BURNER OPERATION

Dear BiSolid GP pellet burner owners,

We would like to congratulate you for your new pellet burner. By purchasing this quality product from the manufacturer you have chosen a system that ensures higher comfort level and optimized fuel consumption in environmentally protecting and natural resource saving way. Your pellet burner is manufactured under strict ISO 9001 standards.

On the next pages we have introduced specific information and important advices about the system operation, its functions and methods of maintenance. Please pay special attention to this manual. Good knowledge of this document content will give you the pleasure of long-term and trouble-free operation of the pellet burner.

We wish you all the best with Your BiSolid GP pellet burner.

1.1. SAFETY INSTRUCTIONS

The wood pellet burner from series BiSolid GP and its accessories correspond to all applicable directions for safety techniques. Your wood pellet burner and all of its accessories operate under variable electricity 220-230 V. Improper electrical installation or repair may endanger user's life from electrical shock. Installation works must be performed only by qualified technicians.

This manual is intended for authorized service specialists only. It is important to know that:

- Works on the heating installation should be performed only by technicians who had acquired such rights by law.
- Works on the electrical installation should be performed by qualified electricians only.
- Initial operation start up including installation visual checks, adjustments and starting must be performed by the manufacturer authorized personal.

Legal provisions

While operating with the appliance please observe:

- Legal provisions for safety techniques.
- Legal provisions for environment protection.
- Provisions for proper installation.
- Applicable provisions of the European community.

Safety instructions

Please observe these safety instructions in order to prevent the people from risks and harms, as well as damage to properties and environment.

Safety instructions explanation.
Please pay attention to the following symbols in this manual:

Danger
This symbol warns for harmful risks or danger to people.

Warning
This symbol warns for risks of damage to properties and environment.

Direction
Information marked with this symbol contains additional data.

Works or activities for setting the appliance in proper technical working order

Direction
In this manual for operation the notation of pellet burner from series BiSolid GP includes pellet burner modifications GP 20_B, GP 25_B and GP 32_B.

Warning
Repairs of constructional elements which functions are related to the technical safety may compromise the safely operation of the installation. Damaged or faulty elements must be replaced with genuine spare parts provided by the manufacturer.

Warning
After carefully reading of the installation and operation manual, you will acquire all necessary information about design, controls and safety operation of the pellet burner. After unpacking the pellet burner please check its completeness and delivered elements. Check whether the pellet burner size corresponds to the desired designation.

If any failures or troubles occur the pellet burner must be led out from operation and removing of the faults/troubles must be provided by specialized company. For proper functioning, safe and long-term operation of the pellet burner, a regular check ups and prophylaxis must be performed at least once per year. Such technical care guarantees your investment.

Repairs should be performed only with genuine spare parts. In case of faults or troubles caused by unqualified installation, non-compliance with the requirements or the operation manual, the manufacturer company is not responsible and does not provide warranty for the product.

1.2. PURPOSE OF THE PELLET BURNER

The purpose of the fully automated pellet burner from series BiSolid GP in combination with hot water solid fuel boilers BiSolid is for heating domestic housings with small and medium sizes. The pellet burner is very good solution for housings heated with BiSolid wood logs boilers, because the installation of the pellet burner to such hot water boiler can be performed by standard assembly kit.
The burner's main advantages as automatic ignition, automatic adjusting of the heating output (in optimization mode for operation with room thermostat) and its multifunction control panel are making its usage easy and comfortable during the heating season.

The burners from series BiSolid GP is designated to utilize wood pellets according to standard EN 14961-2 - ENplus-A1 and its corresponding quality characteristics. The fuel and the air are mixed in the burner by a precisely controlled method and this is the reason for ecological burning and high efficiency.

The wood pellet burner from series BiSolid GP is designated for installation to BiSolid wood log boilers only.

The necessary minimum time for technical servicing of the BiSolid pellet burner, depending on the used wood pellets characteristic and quality, is once per week.

The optimum functionality of the appliance depends either on the professionally designed heating installation or its precise handling.

The main advantages of the pellet burners from series BiSolid GP are:

- The pellet burners from series BiSolid GP are fully automated – ignition, flame control, combustion chamber blowing. It is also equipped with intuitive LCD display for easy operation.
- Automatic adjustment of fresh air and fuel feed rates according to the selected operating temperature, which feature provides high efficiency of the appliance at minimum fuel consumption.
- Automatic modulation of the burning process decreasing the number of stops and ignitions, respectively fuel and electricity consumption.
- Circulations pump control according to heat carrier (water) temperature.
- Quiet operation and low electric power consumption.
- Protection from back-fire and from heat carrier (water) freezing.
- Circulations pump protection against blocking.
- Possibility for control of extractor (flue gas) fan.
- Possibility for operation with room thermostat and week programmer.

1.3. FUEL

The pellet burners from series BiSolid GP are able to utilize wood pellets according to standard EN 14961-2, category ENplus-A1 with the following characteristics:

Table 1. Wood pellets main parameters

Parameter	Dimension	Value
Diameter	mm	6;8
Length	mm	3.5-40
Water content	%	10
Ash content	%	0.7
Mechanical durability	%	97.5
Caloricity	MJ/kg	16.5
Bulk density	kg/m^3	600

Wood pellets must be stored in dry premises, so they can be transported without problems and also in order to achieve trouble-free operation with optimum combustion and maximum efficiency.

Warning

The pellet burner from series BiSolid GP is designated for burning only approved by its manufacturer fuel types.

1.4. PELLET BURNER DESCRIPTION

The pellet burner from series BiSolid GP is with steel made construction and is designed on the principle of feeding the wood pellets through a transport auger, then through flexible pipe over the burner's combustion chamber fire-grate, where the process of burning of the fuel and the oxidizer (air for firing) is achieved.

The burner operation is automatic, including: initial loading dose of fuel, ignition, run, combustion, parameters monitoring of the combustion process, controlled stops at the water temperature reaching and (or) signal from the room thermostat, final blow. In the optimization mode, at the operation with the room thermostat is carried optimized modulation based on the thermal characteristics of the site.

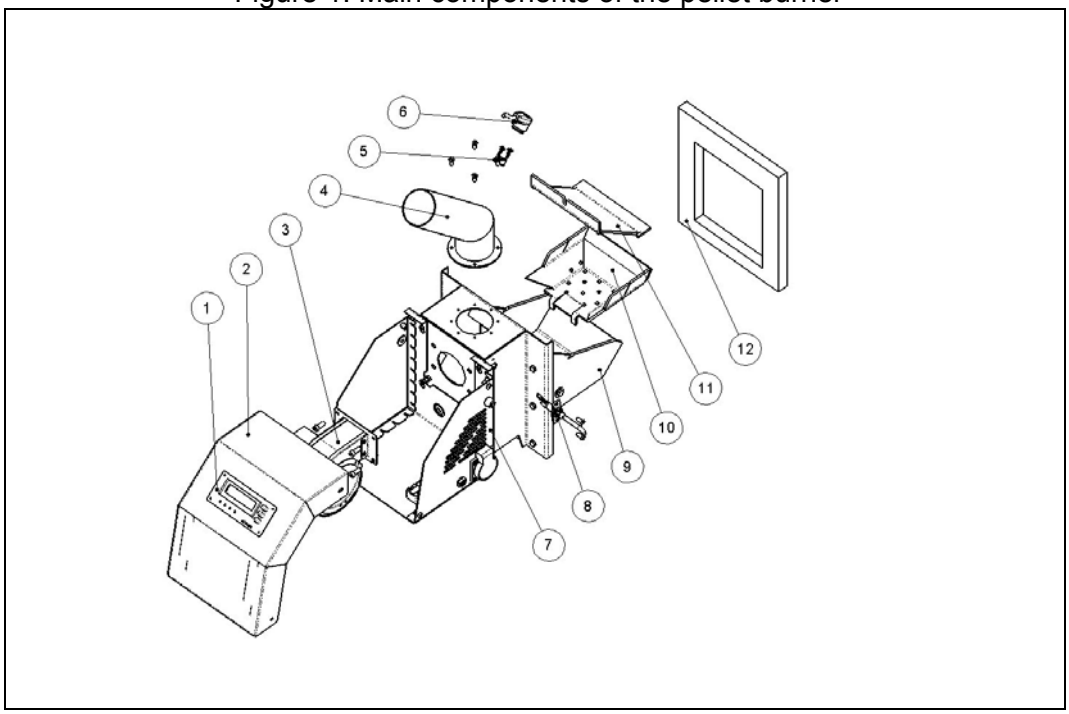
The pellet burner is equipped with display panel which shows information for the burner's current operation parameters and/or for adjustment of its operating parameters.

Direction

In this manual for operation the notation of pellet burner from series BiSolid GP includes pellet burner modifications GP 20_B, GP 25_B and GP 32_B.

The main components of wood pellet burner from series BiSolid GP are presented in Figure 1.

Figure 1. Main components of the pellet burner



1. Front panel – intuitive LCD display
2. Main module cover panel
3. Fresh air fan
4. Pellets feeding pipe
5. Thermal switch
6. Coupling
7. Main module housing
8. Photo-sensor
9. Combustion chamber
10. Fire-grate
11. Combustion chamber cover
12. Isolation

1.5. PELLET BURNER OVERALL DIMENSIONS

Overall dimensions of pellet burner from series BiSolid GP are presented in Figure 2 and Figure 3.

Figure 2. Overall dimensions of the pellet burner

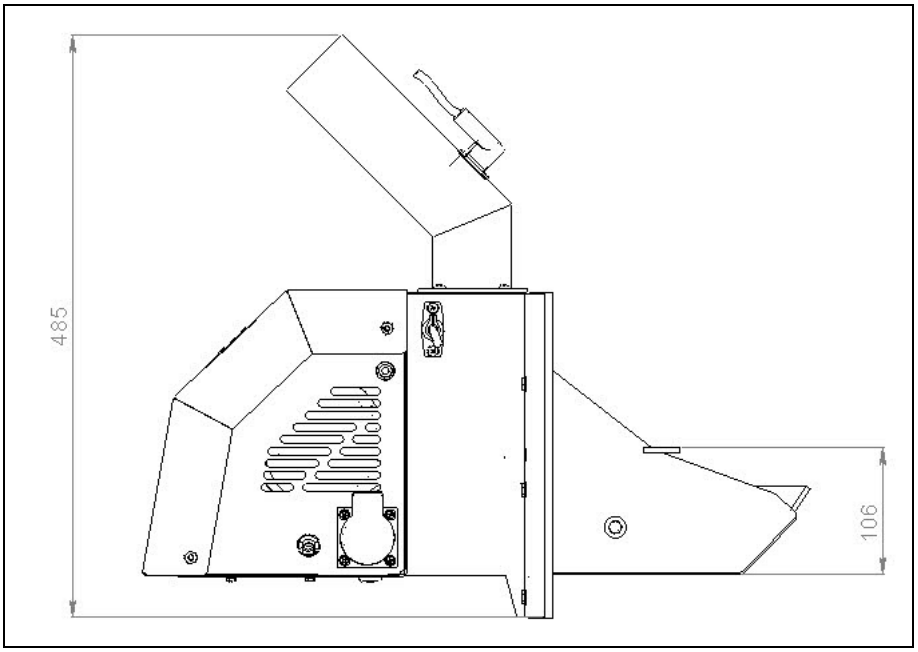
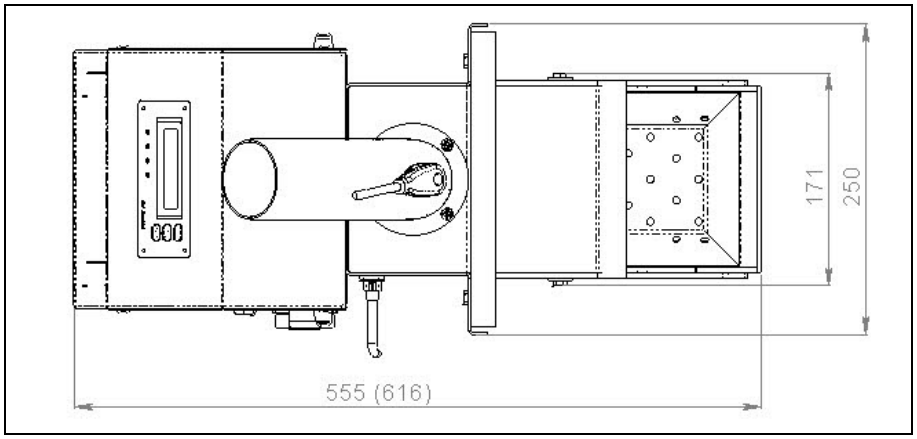


Figure 3. Overall dimensions of the pellet burner



Direction

The dimension presented in brackets in Figure 3 concerns the length of pellet burner GP 32_B.

1.6. PELLET BURNER TECHNICAL DATA

Technical data for pellet burners from series BiSolid GP are presented in Table 2.

Table 2. Technical data for pellet burners from series BiSolid GP

Description	Dimension	Value		
		GP 20_B	GP 25_B	GP 32_B
Fuel	-	Wood pellets		
Wood pellets category according to standard EN 14961-2	-	ENplus-A1		
Nominal heating output	kW	18	25	35
Heating output range (performed by authorized servicing technician)	kW	5-18	7-25	10-35
Wood pellets consumption at nominal heat output	kg/h	4.2	5.8	8.0
Pellet burner size: wide x height x lenght (W x H x L)	mm	250x485x555	250x485x555	250x485x616
Pellets transport auger size: wide x height x lenght (W x H x L)	mm	110x206x1520	110x206x1520	110x206x1520
Voltage	V, Hz	230, 50		
Electrical consumption (with ignition)	W	100 (1200)		
Degree of electrical protection	-	IP 20		
Burner net weight	kg	15.9	15.9	17.1
Transport auger net weight	kg	8.3	8.3	8.3

2. INTRODUCTION

2.1. PELLET BURNER GENERAL REQUIREMENTS

The pellet burner and its accompanying equipment must be installed and used in accordance to the designed heating installation, all applicable legal norms, technical standards and manufacturer instructions. The pellet burner should be used only for the subscribed purposes.

The pellet burner must be installed only for the purposes for which is designed. If the pellet burner is delivered and installed to the customer by the same person, then the whole accompanying documentation must be provided as well (especially the user manual book). The pellet burner's genuine package should be kept until its initial operation start up, in case it should be transported again.

After installation the pellet burner operation must be initiated by service organization, authorized by the manufacturer.

The pellet burner corresponds to the applicable EU legal provisions. If the pellet burner should be used in countries outside the EU, all deviations from local laws and legal provisions must be identified and corrected.

In case of faults in the pellet burner please contact a servicing organization, authorized by the manufacturer. Every incompetent intervention might damage the pellet burner (and possibly the accompanying equipment).

The servicing technician initializing the pellet burner start up for first time must show the customer all of its main components and modules, and also how to operate it. The technician must present the pellet burner's safety elements and signalization, and respectively the relevant user reaction. If the pellet burner is delivered and installed to the customer by the same person, then he must ensure that its genuine package is kept, in case the burner should be transported again.

Please check the delivery of the pellet burner standard accompanying equipment.

Please check if the delivered model and type of the pellet burner corresponds to the usage requirements.

If you are not sure how to manage the pellet burner, please carefully read the relevant instructions in this manual for operation and installation, and respectively continue as prescribed.

Please never take/stick off or damage the marks and signs on the pellet burner and the fuel transport auger. Please keep the burner genuine package until its initialization to operation, in case it should be transported again.

If doing a repair, you must always use genuine spare parts only!
It is forbidden to make any changes to the internal installation of the pellet burner and fuel transport auger or to change anything in any way.

At the end of the pellet burner's life cycle, it should be packed together with its parts and disposed in an environmentally safe way.

The manufacture company is not responsible for damage or harms caused by non-compliance with:

- Terms and conditions stated in this manual for operation and installation.
- Applicable standards and legal provisions.
- Procedures for installation and operation.
- Terms and conditions presented in the product warranty card.

Warning

Switch off the pellet burner every time when there is any (even momentary) danger by the presence of flammable or explosive vapors situated in the same room from which the burner intakes air for burning (for example painting paint, spraying or laying moltening substances, gas leakage, etc.).

2.2. ENSURING PEOPLE AND EQUIPMENT SAFETY

The wood pellet burner and all of its parts are in compliance with the safety requirements of the relevant EU legal regulations.

In order to install and operate the pellet burner in real-time conditions and in compliance with its usage designation (stated below only as usage), is necessary also to observe the additional requirements, as most important of them (those that should not be missed) are presented in the relevant regulation documents. In addition to the above mentioned documents for the usage of the pellet burner it is also necessary to comply with this operation and installation manual and the product accompanying documentation supplied by the manufacture company.

Any intervention over the pellet burner's operation from children and persons under the influence of narcotic substances, psychiatric abnormalities and etc., must be prevented.

3. OPERATION INSTRUCTIONS

3.1. OPERATION OF PELLET BURNER FROM BISOLID GP SERIES

The pellet burner from BiSolid GP series must be handled only by adult people, which have been already introduced to the burner operation and its proper handling. The people operating the pellet burner must strictly comply with the installation and operation manual and they have rights only to:

- Clean the burner.
- Fill up the transport auger with fuel.
- Clean the photo-sensor periodically.
- Adjust the water temperature (operation without optimization with room thermostat).
- Change the optimization time (operation with room thermostat).
- Check photo-sensor lightness. Do not change its settings.
- Check for presence of alarm messages.
- Check and adjust temperature for start of water circulations pump.
- Switch on or off the pellet burner. It is recommended to do it by the key Start, located on the boiler's control panel.
- Check the pellet burner condition.

After initializing the pellet burner into operation the servicing technician is obligated to introduce the user with the operation and maintenance of the appliance. Attendance of children without supervision near the pellet burner is not allowed. Any interventions or activities over the burner construction that may endanger the life or health of the handling or attending personal are strictly forbidden.

Usage of flammable liquids for easier firing as well as any activities related to increase of the pellet burner's nominal heating output (overloading) are strictly forbidden. Positioning of flammable objects near the burner is also not allowed.

Danger

In case of danger from penetration of flammable vapors or gasses in the boiler room or any activities that may lead to fire or explosion (gluing the flooring, varnishing with flammable paints or others), the pellet burner must be led out of operation before starting any of these activities.

3.2. SAFE OPERATION OF THE PELLET BURNER

All safety prescriptions must be observed when the pellet burner from BiSolid GP series is operating. The pellet burner must not be used for any other purposes except the ones introduced in this operation manual.

The surface of the pellet burner should be cleaned only with standard inflammable cleaners. Positioning of objects made of flammable materials over or near the pellet burner, at shorter than the safe distance is not allowed.

It is not allowed to store flammable materials (wood, paper, oil and other flammables) in the same room, where the pellet burner and the boiler are situated.

The recommended safe distance between the boiler, with installed pellet burner from BiSolid GP series, and the fuel must be minimum 1000 mm.

The minimum allowed distance between the pellet burner's outer parts and easy or medium flammable materials, also including fuel, must be at least 400 mm.

Removal of the ash remainings from the burner should be performed by taking out the combustion chamber fire-grate. The fire-grate, where the ash deposits gather, must be emptied on time, before its complete filling. All activities related to removal of the ash from the pellet burner should be performed after cooling of the fire-grate, as the usage of metal pliers is strongly suggested. Please also use protection gloves as a safety measure.

Danger

When installing the pellet burner and the elements for safety and control please do not forget that all installation works must comply with the safety labor principles. If a pellet burner or fuel transport auger component replacement is necessary, please use the recommended elements. In case of using any other type of component you should ask the manufacturer company first. The pellet burner and fuel transport auger functionallity must be checked by authorized servicing specialist once per year.

4. PELLET BURNER INITIALIZATION FOR OPERATION

4.1. PELLET BURNER CHECK-UPS BEFORE INITIALIZATION FOR OPERATION

Before initializing the pellet burner for operation the servicing technician must check:

- If the pellet burner from BiSolid GP series is going to be installed on a solid fuel BiSolid hot water boiler.
- If the installation, including the hot water boiler, complies with the project.
- If the wood pellets correspond to standard EN 14961-2, category ENplus-A1.
- Electrical supply functionality and working order.

Warning

The service technician must train the consumer how to operate and manage the pellet burner and also to fill in the exact start of operation date in the warranty card of the product

4.2. JOINT OPERATION OF PELLET BURNER AND SOLID FUEL BOILER

The pellet burner from series BiSolid GP is allowed for installation only to hot water boilers approved by its manufacturer.

The possibility for parallel operation of solid fuel hot water boiler with automated pellet burner from series BiSolid GP is based on the fact that the burner manufacturer has performed multifunctional and precise tests and measurements over the pellet burner operation with certain type of hot water boilers. Assembly of the pellet burner to a hot water boiler must be performed with the appropriate installation kit.

Warning

The pellet burners from BiSolid GP series must be installed only to solid fuel hot water boilers from series BiSolid.

5. OPERATION AND CONTROL OF PELLET BURNER FROM BISOLID GP SERIES

5.1. DESIGNATION OF THE PELLET BURNER CONTROLLER

The device is designated to provide automatic control of the burning process and adjustment of the pellet burner's heating output, depending on the building and premises heating needs.

5.2. OPERATION OF THE PELLET BURNER CONTROLLER

The device can control the following system modules:

- Fuel transport auger.
- Fresh air and extraction fans.
- Electrical heating element for ignition of the pellets.
- Circulations pump for the boiler.

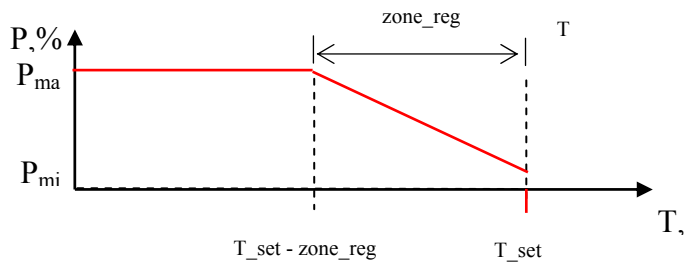
Warning

At primary switch on, as well as when switching the power supply off, the burner goes through stop procedure.

5.3. STARTING THE PELLET BURNER

When missing stop signal or in case of emergency situation and there is difference between the adjusted and the measured temperature from the **To** sensor, then the burner starting procedure initiates. The initial fuel doze is loaded and the ignition switches on. After establishing the presence of flame the burner heating output increases. When the modulation zone „Zone_reg" has been reached the burner heating output decreases (there is service parameter for adjustment) and when the desired temperature has been reached the burner operates at its minimum heating ouput. When higher than the adjusted temperature has been reached, the system responds with stop procedure.

When the burner is in the modulation mode and therefore the power is reduced with a decrease in temperature in the automatic way the power is increased.



5.4. SWITCHING OFF THE PELLET BURNER

In presence of stop signal, emergency situation or measured temperature above the adjusted, system stop procedure initiates. It is next followed by ventilation time, during which the combustion chamber cools down and the remaining ash over the fire-grate is being blowed out.

5.5. TEMPERATURE AND SECURITY RESTRICTIONS

When managing the pellet burner from BiSolid GP series it is necessary to consider the following temperature and security limitations:

- Minimum assignemt for inlet water temperature.
- Maximum assignemt for inlet water temperature.
- Water freezing protection.
- Boiler overheating and „back-fire" protection.
- Circulations pump blocking protection.

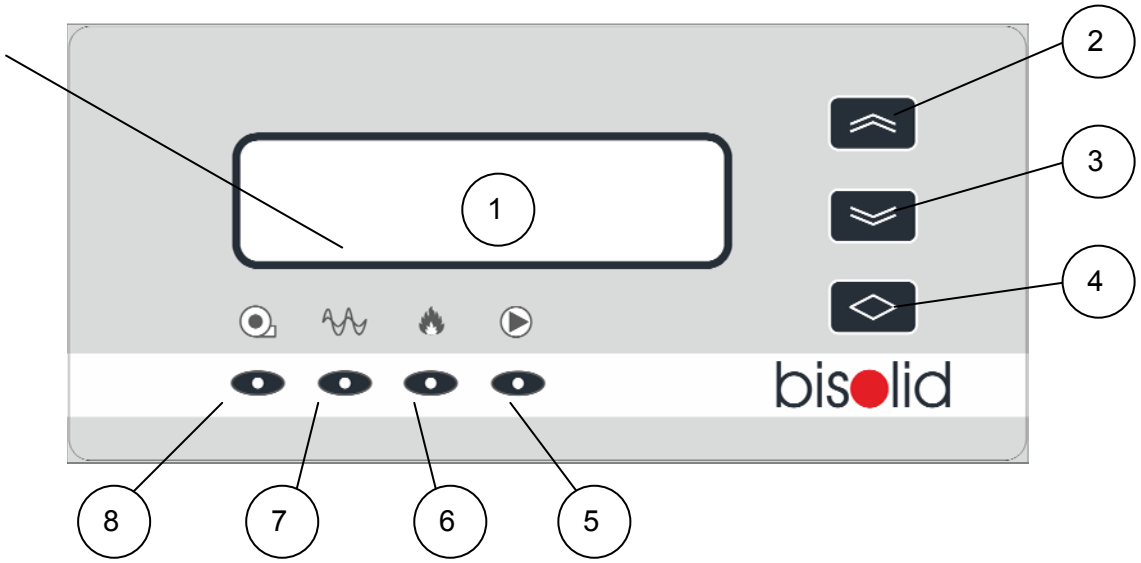
Warning

Water freezing protection – starts the burner when the temperature is below 5 °C.
Boiler overheating and „back-fire" protection – input signal from the blocking thermostat, and when the signal contact is opened the burner stops.
Circulations pump blocking protection – drives/rotates the pump for 5 minutes, in case it has not been operating for at least 24 hours.

5.6. FRONT CONTROL PANEL OF THE PELLET BURNER

Front control panel is presented in Figure 4 – intuitive LCD display of pellet burner from BiSolid GP series.

Figure 4. Front control panel of pellet burner from BiSolid GP series



1. Front panel indication – intuitive LCD display.

2. Changing button “next” / or manually switching on/off the pellets transport auger (if holded for 5 sec. together with additionally known conditions described below).
3. Changing button “back”.
4. Button for enter / exit from programming mode (user settings), switch on / off (if holded for 5 sec).
5. Pump operation indicator.
6. Ignition heating element operation indicator.
7. Transport auger operation indicator.
8. Fresn air fan operation indicator.

On the display’s main window the following parameters are shown:

- T_set – Adjusted temperature of the heating water.
- Stop / Start / Work (operation) – current procedure execution.
- T – current temperature of the heated water.
- P – currently used heating output.

5.7. OPERATION (FUNCTIONING) OF THE PELLET BURNER

Direction

In this part of the operation manual is presented information only for the users. The information for servicing specialists is presented separately.

Make sure that the controller is not in switch off condtion, otherwise the following message will be displayed:

System is off from external sw	or	System is off from internal sw

Warning

The controller (the pellet burner) can be switched on or off by the front panel or by the remote control electrical input. The remote control input is usually connected to a START key with two resistant positions. **WE RECOMMEND THAT THE BURNER IS SWITCHED ON OR OFF BY THIS START KEY!** The controller switches off no matter which source sends STOP command, but can be switched on only when there is START command on both places.

By pressing the button „◆” the controller switches to warning message “Check Status”, after that with buttons „↑” or „↓” you can again have access to „**Programing**”, but the device will not switch on.

Depending on the displayed message the starting can be performed by:

- Message „System is off from external sw” –press the START key connected to the remote control electrical input (key START). *(see section programming “Electrical supply and technical characteristics”).*
- Message „System is off from internal sw” – press and hold the button „◆” for 5 sec. After that it is recommended that: **THE PELLET BURNER MUST BE SWITCHED ON AND OFF BY THE KEY START (WITH TWO RESISTANT CONDITIONS)!**

- In off position, when one of the above messages is displayed on the control panel, by pressing and holding the button „↑" the transport auger can be manually switched on or off, in case of refilling when it's empty.

Warning
Before manual starting make sure the burner has died out (no flame).

MODE BY THE WATER TEMPERATURE

The target value or assignment can be adjusted manually or by room thermostat (*see section programming "Service settings"- information for specialist*).

Setting by manual temperature adjustment – this mode is for operation without room thermostat and can be chosen from the service settings menu: Press the buttons „↑" or „↓" until the indication shows the measured and adjusted values:

T_set ...°C T ...° C P...%

With manual temperature adjustment, by pressing the button „◆" for entrance in programming mode, the assignment value starts blinking. With buttons „↑" or „↓" you can make changes from „T_set_min" to „T_set_max" (the range can be defined in the service menu).

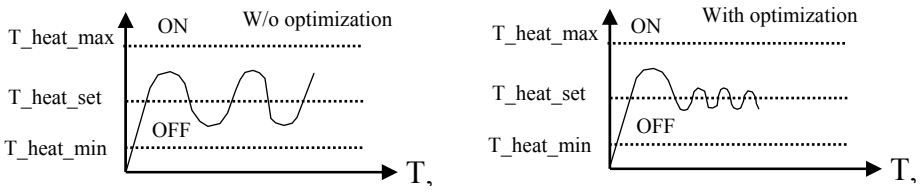
To confirm changes press the button „◆" again or for automatic confirmation wait around 10 seconds.

MODE WITH THE ROOM THERMOSTAT

With room thermostat control (can be choosed from the service settings menu) by pressing the button „◆" for entrance in programming mode, information about the room thermostat condition and optimization time is showed:

Room Reg ..... Opt. time … min

With buttons „↑" or „↓" you can make changes from 0 to 60 min, with 5 minutes pitch. When the optimization time is used the adjusted water temperature fluctuations number decreases, which leads to much better regulation of the heating water.



When there are switches on and off from the room regulator and it operates without optimization (0), the heating water adjustment becomes:

- At start - maximum.
- At stop – minimum.

When there are switches on and off from the room regulator and it operates with optimization (5-60 min.), the heating water adjustment becomes:

- At start – increase starts, as the maximum assigned temperature value is reached at the end of the optimization time, only in case there is no stop occured during this period.
- At stop – decrease starts, as the minimum assigned temperature value is reached at the end of the optimization time, only in case there is no start occurred during this period.

Direction

1. The used room thermostats must be contact type with hysteresis 0.5 – 1 °C.
2. The optimization time must be with 5 – 10 min. longer that the time between two starts of the room thermostat in stabilized conditions. In practice these times can be adjusted according to the installation system inertia:
   - Low inert systems – (5 – 20) min.
   - Medium inert systems – (25 – 40) min.
   - High inert systems – (45 – 60) min.

INFORMATION ABOUT THE FLUE GAS TEMPERATURE (NOT MANDATORY OPTION, THE STANDARD MODEL IS EQUIPPED WITH PHOTO-RESISTOR)

Go through with buttons „↑" or „↓" until the flue gas temperature inscription indicates:

Flue gas T_flue _gas… °C

ADJUSTMENT OF THE PHOTO-SENSOR SENSIBILITY (STANDARD ADJUSTED TO 50%)

Go through with buttons „↑" or „↓" until available light in the combustion chamber inscription indicates:

Photo sensor Light … %

By pressing the button „◆" the adjusted value appears and starts to blink:

Photo sensor Light set … %

With the buttons „↑" or „↓" you can change the value from 0 to 100% **(Note: Changes are not recommended!).**

To confirm changes press again the button „◆" or for automatic confirmation wait around 10 sec.

INFORMATION AND WARNING INDICATION MESSAGES

Go through with buttons „↑" or „↓" until one of the following messages indicates:

Messages Status is OK!

When there is no signal from any of the blocking thermostat sensors or no lack of flame an inscription „**Status OK**" indicates.

When there is a signal from activated sensor the following messages are displayed:

- Activated blocking thermostat:

ATTENTION! Overheating

- No flame:

ATTENTION! No detect flame

By pressing the button „◆" it switches to warning message "Check Status", after that by pressing the buttons „↑" or „↓" you can retain access to "**Programming"** again.

Warning

In case of message for no flame „**No detect flame**" is necessary to switch the device off and then on, in order to clear the warning message.

MINIMUM TEMPERATURE TO START THE CIRCULATIONS PUMP

Go through with buttons „↑" or „↓" until the water temperature indicates and after that press the button „◆":

T_on_pump T_on_set… °C

Again by pressing the buttons „↑" or „↓" you can make changes from 10 – 70 °C. To confirm the changes press the button „◆" again or for automatic confirmation wait for aroung 10 seconds.

SERVICE SETTINGS

Go through with buttons „↑" or „↓"until the following messages indicates:

Service Set for technicians

The procedures here are password protected and are available only for trained servicing technicians, having additional information.

5.8. CONNECTING THE PELLET BURNER TO THE ELECTRICAL POWER SUPPLY

When connecting the pellet burner from BiSolid GP series to the electrical power supply installation it is necessary to have in mind the following technical characteristics (Table 3).

Table 3. Pellet burner technical characteristics

Description	Dimension	Characteristic
Supply voltage	V; Hz	~230; 50
Ignition element output	V; kW	~230; 2.0
Circulations pump output	V; kW	~230; 0.35
Fans ouput	V; kW	~230; 0.25
Fuel transport auger output	V; kW	~230; 0.25
Cleaner supply voltage - option	V	24V DC
Heating water sensor	-	Pt 1000 (-50 to +250 °C)
Flame detecting sensor	-	Photo-resistor
Room thermostat infput	-	Independent contact
Blocking thermostat input	-	Independent contact
External switch off input	-	Independent contact
Measurment dimension	-	1 °C

Warning

All works and activities with regards to connecting the pellet burner to the power supply system must be performed by certified trained person.

Warning

The pellet burner must be connected to the electrical installation of the appliance to which it is attached, by observing the safety technique rules.

5.9. WARRANTY AND WARRANTY CONDITIONS

We pay attention to customers that initializing into operation and technical servicing of all pellet burner models from BiSolid GP series must be performed by specialized installation company. Otherwise any eventual warranty claims will not be accepted. Warranty issues must be claimed just after the defect has been discovered. The manufacturer reserves the right to make changes, related to the product technical optimization. The warranty period is presented in the pellet burner's warranty card, which is its main belonging and is determined by the precise observation of the instructions in the current manual for installation, operation and maintenance. The Buyer has to issue a warranty claim in written form and present it to the Seller or to an authorized servicing company.

5.10. PELLET BURNER PACKAGE KIT AT DELIVERY

All wood pellet burners from series BiSolid GP are delivered fully assembled and functionally tested.

The main pellet burner accessories are:

- Installation and operation manual 1 pc.
- Warranty card 1 pc.
- Main module with combustion chamber 1 pc.
- Isolation 1 pc.
- Fuel transport auger 1 pc.

Spare parts and accessories for the pellet burners can be ordered to the servicing technician who performed the installation or directly to the supplier.

5.11. PELLET BURNER CLEANING

When the pellet burner operates continuesly ash and/or slag gather over the surfaces of the fire-grate, located in the burner's combustion chamber, and decrease the appliance efficiency. The accumulated ash or/and slag quantity depend mainly on the operation modes of the appliance and the type of used fuel. Cleaning of the pellet burner has to be performed according to the necessity and operation conditions, but at least once per week.

The combustion chamber fire-grate of the pellet burner can be cleaned manually, by taking it out from the burning device. The controller of the pellet burner from BiSolid GP series enables combustion chamber cleaning by air-blowing in the beginning and at the end of the cycle.

Warning

After the pellet burner main module cools down the fire-grate can be taken out from the combustion chamber. For your safety please use pliers and gloves when cleaning the burner fire-grate.

After cleaning the pellet burner fire-grate from the ash and/or the slag, the fire-grate must be placed back in the burner combustion chamber.

5.12. PELLET BURNER SERVICING

The regular burner servicing by the user guarantees efficient, economic and reliable operation of the appliance. The user has to periodically, at least once per day or longer, depending on the fuel ash content, but no longer than five days of operation, to switch off the burner. This measure guarantees effective after-burning of the fuel and combustion chamber cooling.

After the pellet burner cools down the ash and/or slag must be cleaned from the combustion chamber fire-grate.

The flexible pipe connecting the fuel transport auger and the burner fuel inlet pipe must be cleaned from dust at least once per week.

Danger

Dust depositing on the flexible pipe walls can lead to distortion of the fuel feeding, ignting the dust as a result of emergency situation, in consequence of which hot flue gasses might pass through it.

Warning

It is necessary that the user is fully introduced with the information presented in the current operation manual, in connection with the pellet burner operation, its control and servicing.

6. INSTALLATION INSTRUCTIONS FOR PELLET BURNER BISOLID GP

6.1. PELLET BURNER INSTALLATION – COMMON INFORMATION

The wood pellet burners from series BiSolid GP must be installed only by specialized company, authorized for such activities. The pellet burner installation must be performed depending on the solid fuel hot water boiler type from BiSolid series, the preliminary designed project and acting legal provisions.

The existing networks of authorized service organizations comply with these conditions and are able to take responsibility for all pellet burners BiSolid GP (GP 20_B, GP 25_B and GP 32_B) installations, their initialization in operation and warranty repairs.

Installation of the pellet burner must comply with the acting regulations and directives as well as to the operation and installation manual. The manufacturer is not responsible for failures or damages caused by unqualified installation.

Warning

The pellet burners from BiSolid GP series must be connected to the power supply only by qualified authorized person.

Warning

All problems (failures) caused by incorrect installation of the pellet burner are not covered by the pellet burner's warranty cards.

6.2. CHOOSING A PELLET BURNER

The choice of suitable pellet burner from series BiSolid GP is necessary to be made accordingly to the heating output of the different types and models hot water boilers BiSolid. The correctly chosen pellet burner used for installation to the mentioned hot water solid fuel boilers guarantees economic and optimum operation of the system boiler – burner.

The choice of pellet burner with too high nominal heating output, compared to the boiler's output, leads to increased consumption and fuel expences.

The choice of pellet burner with much lower nominal heating output, compared to the boiler's output, leads to impossibility for reaching the boiler's nominal parameters and low efficiency.

6.3. POSITIONING OF THE PELLET BURNER

The pellet burners from series BiSolid GP can be installed on hot water boilers from series BiSolid, which are positioned in uninhabitable premises (for example boiler room, basement).
The pellet burner and boiler room must have constant fresh air intake, needed for the burning process. The air has to be clean, without halogen hydrocarbons, corrosive vapors and should not be too wet and dusty. The room must be protected against freezing, with ambient temperature in the range from +5°C to +35°C and with no more than 80% relative humidity of the air.

Safe 200 mm distance must be kept in the cases when the flammability level of the material is unknown. The same safety distance must be kept also for domestic objects, flammable materials and fuels situated in the room, where the burner is positioned.

Danger

Do not put flammable materials over burner's main module top side or near it within the safety distance.

The main module of the pellet burner from BiSolid GP series must be installed in horizontal position towards a suitable solid fuel hot water boiler from series BiSolid. The pellet burner position has to be considered so it can provide its reliable operation, easy cleaning, handling and servicing. Correct positioning during the pellet burner installation guarantees reliable and efficient parallel operation of the burner and the hot water boiler.

The fuel transport auger must be installed near to the already installed pellet burner, in order to secure its good connection, through the flexible pipe, with the burner's main module fuel supply pipe.

About the positioning of the fuel transport auger we recommend that the angle between the horizont plane and the auger center axis is 45^{o}. By this way an optimum operation of the auger motor and the burning process will be guaranteed.

Warning

If the fuel transportation auger's angle changes, then the wood pellet consumption changes respectively depending on the pellet burner heating ouput.

When the fuel transportation auger's angle decreases, then the wood pellet consumption increases and respectively the pellet burner heating output increases. When the fuel transportation auger's angle increases, then the wood pellet consumption decreases and respectively the pellet burner heating output decreases.

The fuel transport auger and the wood pellets hopper, where it is located, positions are recommended to be situated in a way that provides easy access to the pellet burner, for the purposes of adjustment, cleaning and servicing.

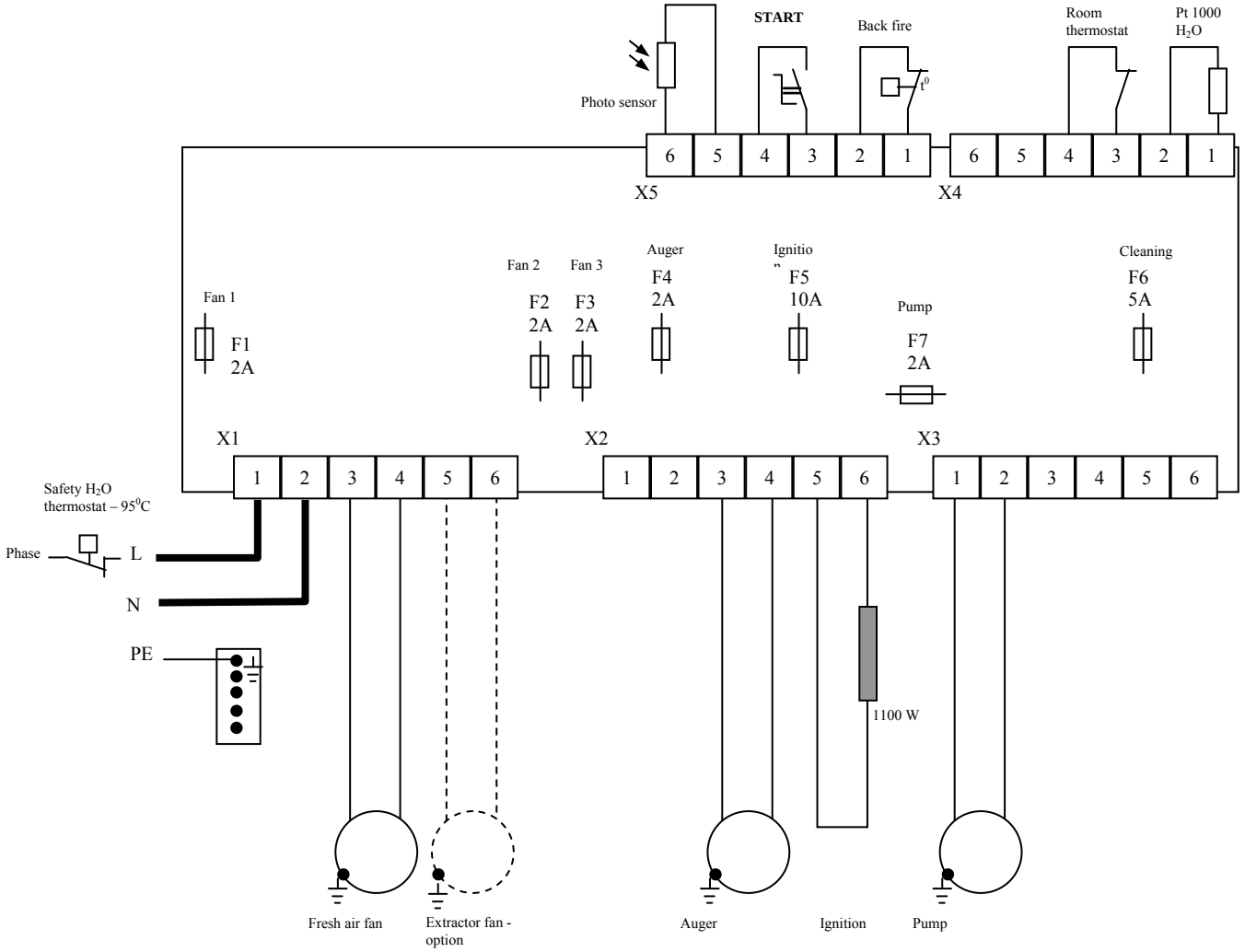
6.4. TRANSPORTATION AND STORAGE

The pellet burners for expedition are offered by the manufacturer in carton packages and are secured against moving. The pellet burners can not be transported in position different from their base (normal operating position).

During transportation and storage the pellet burners packages and cover panels should not be pressed.

7. PELLET BURNER WIRING DIAGRAM

Figure 5. Wiring diagram of the pellet burner



8. TROUBLESHOOTING

Failure	Reason	Solution
The burner is installed on a heating boiler, but the temperature in the rooms is low.	Insufficient heating output.	It is necessary to increase the burner's heating output level.
	Low assigned water temperature.	It is necessary to increase the water temperature assignment. It is also necessary to chek the circulation water assignment, adjusted in the burner controller.
	Low assigned temperature by the room thermostat (if connected).	It is necessary to increase the temperature assignment by the room thermostat.
The burner is installed on a heating boiler and the temperature in the rooms is high.	Heating output, exceeding the heat consumption.	It is necessary to decrease the burner's heating output.
	High adjusted temperature.	It is necessary to decrease the assigned value (recommended decrease to minimum 60^{o}C) or the assigned circulation water temperature, defined in the controller.
	High assigned temperature by the room thermostat (if connected).	It is necessary to decrease the temperature assignment by the room thermostat.
The burner is switched on, but there is no burning process.	There is no assignment for operation.	Check the operation assignment from the burner control module.
Difficult fuel ignition.	The used wood pellets are with low quality.	It is necessary to change the pellets, as possibly their water content is higher than the normal needed for the burner operation.
The fuel ignition is accompanied by untypical noises.	Insufficient chimney draught.	It is necessary to check the chimney and the appliance condition, to which the burner is installed and to clean the ash deposits. After cleaning is possible to adjust the burner operating parameters – ask for service assist.
Hot water boiler overheating – to which the burner is installed.	Lack of heating load or incorrect heating ouput adjustment of the boiler and the burner.	It is necessary to check the correct operation of the system boiler-burner and eventual adjustment of the operating parameters – to be performed by a specialist. After boiler cooling and failure removal the emergency thermostat has to be deactivated (unscrew protection cover, press the button and screw

		the cover againg). Start the burner by restarting it.
Fuel does not ignite.	No wood pellets in the fuel hopper.	The fuel hopper, from which the transport auger takes fuel, must be refilled.
	No fuel in the burner combustion chamber.	The process of initial firing can be renewed by restarting the burner.
	Presence of fuel over the burner fire-grate, but is not fired or it is burned and there is still lack of burning process.	Clean the gathered fuel over the burner fire-grate. If the ignition heating element is out of order or inactive, then it must be replaced.
	Incorect operation of the photo-sensor used for burning process monitoring.	The photo-sensor used for burning process monitoring must be adjusted or repaced – to be performed by servicing specialist only.
The burner does not start or stops operation.	No power supply.	Check if the burner display and its indication operate. Check working order of the appliance power supply, to which the burner is installed and powers it with voltage 220 V, 50 Hz – to be performed by servicing technician. Check burner correct wiring, according to the presented wiring diagram. Check for loose electrical connections – to be performed by servicing technician.
	No start signal to the burner.	Check if the burner has received start signal and if the module, providing signal for operation to the burner, wiring is in working order – to be performed by servicing technician. Check for loose electrical connections. Check the working order of the burner operation control module, which provides voltage and necessary signals.
	The burner does not operate even if there is operation signal.	Check for activated emergency alarm – check the list with alarm modes and indications of the controller, presented in the next table.

	Blown fuses.	**To be performed by servicing technician:** check the fuses condition and if there is necessity for replacement, then change the fuses with the same corresponding parameters (**Warning**: the fuses are fast-reacting).
The flame from the burning process is “dim”and the chimney smokes much.	Wood pellets with low quality.	It is necessary to change the pellets, as possibly their water content is higher then the normal needed for the burner operation.
	Unsuitable adjustment of the burner parameters.	Adjustment of the appliance operating parameters is necessary – to be performed by specialist.
The burner starts but it can not reach to stabilized condition.	Incorrectly positioned photo-sensor.	Change the photo-sensor, used for burning process monitoring, position by rotating it around its longitudinal axis.
	The photo-sensor surface is dirty.	Clean the dirts carefully.
	The photo-sensor is damaged – there are burnout traces on its surface.	It is necessary to replace the photo-sensor with new one – ask for service assistance. Reason – incorrect burner switch off.
Unstable operation of the burner.	Photo-sensor failure.	Check photo-sensor working order.
	Controller operation settings are changed.	Check the burner heating output level setting.
		Check the controller settings – to be performed by servicing technician.
Excess heating of the burner’s pellet inlet pipe.	Insufficient chimney draught or presence of dirt.	It is necessary to clean the appliance and the chimney if necessary. Possible solution is to install flue gas extractor fan or/and change the chimney.
Heating of the burner’s pellet inlet pipe and emergency thermostat activation.	Low chimney draught or the appliance is contaminated with dust particles.	It is necessary to clean the appliance and the chimney, if necessary. It is necessary to restart the burner. Possible solution is to install flue gas extractor fan or/and change the chimney line.
Dirty and/or melted photo-sensor.	Incorrect burner switching off.	It is necessary to clean the photo-sensor surface or to replace it with new one. It is necessary to observe the burner switch off procedure, presented in the manual guide.
Presence of unburned fuel over the combustion chamber	Inefficient fuel combustion.	It is necessary to adjust the appliance operation parameters – it is necessary to ask for consultation

fire-grate.		or adjustment by authorized technician.
Slag deposits over the combustion chamber fire-grate.	The used fuel is with high ash content and does not comply with the appliance requirements.	Change the fuel with other one, complying with the burner requirements for reliable operation.
	Burner operation mode over its nominal heating output.	Decrease the burner heating output by changing its heating output level.
Failure, showed on the controller display	Problem in the burner operation.	It is possible to ask for servicing assistance/consulation.
The burner has stopped, but after new start it operates.	The photo-sensor sends wrong information to the controller.	Check the fuel quantity over the burner fire-grate. Ask for assistance for adjustment or consultation by servicing technician.
High flue gas temperature (if thermometer is installed).	Dirty heat-exchanging surfaces, depending on the appliance type and operation mode.	It is necessary to clean the heat-exchanging surfaces of the appliance.
Smoke presence in the boiler room after a period of operation.	Dirty or clogged with ash flue-gas line inside the appliance – which consumes the heat energy.	Clean the appliance from the ash deposits – which consumes the heat energy.
Other, not described above failures.		It is necessary to ask servicing technician for consultation or/and for his intervention.

In all other cases, the removal of eventual failures and damages must be performed by the manufacturer or by authorized servicing company.

Supplier:	
Address:	
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http://	

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